improved drying. As shown in applicant's specification (page 26) the use of 2.5% reactive water-soluble polymer in place of 7% starch results in a 36% decrease in drying time. It is this significant decrease in drying time that makes feasible the use of a more expensive reactive water-soluble polymer instead of the conventional, very inexpensive starch binder.

The principal reference cited in the Office Action, Adamowicz et al patent, is directed to Inorganic Binders for Articles formed from Fibers that may be used to form various fiber-containing products such as acoustical ceiling tile. Adamowicz et al describes an inorganic binder that requires two basic materials, namely (a) a lithium and/or sodium water-swelling mica and (b) a source of organic polycations (See Col. 5, lines 46-53).

Applicant's broadest claims require a lightweight aggregate, cellulosic fiber and a reactive water-soluble polymer binder. The organic polycations of Adamowicz et al respond to the reactive water-soluble polymeric binder claimed by applicant. The preferred source of organic polycations described by Adamowicz et al is KYMENE 557H (col 4, lines 19-22). Admittedly, KYMENE 557H is a reactive water-soluble polymeric binder within the scope of applicant's claims and the same material used as a binder in applicant's examples (See page 13).

However, Adamowicz et al requires the binder to contain a specialized fluoride-containing material, namely a lithium and/or sodium water-swelling mica that has no counterpart in applicant's composition. Adamowicz et al describes basic material (a) as:

> "a lithium and/or sodium water-swelling mica selected from the group of fluorhectorite, hydroxyl hectorite, boron fluorphlogopite, hydroxyl boron phlogopite, and solid solutions among those and between those and other structurally-compatible species selected from the group of talc, fluortalc, polylithionite, fluorpolylithionite, phlogopite, and fluorphlogopite." (Col. 5, lines 46-52)

In Column 6, Adamowicz et al gives the oxide basis of the specialized lithium and/or sodium water-swelling mica. Clearly this component of the binder requires a substantial fluoride component. Adamowicz et al goes on to describe the preferred embodiment of the process used to prepare the lithium and/or sodium water-swelling mica, which includes heating for 4 hours at 700° C. (Col. 8 line 27-28). Adamowicz et al goes on further to explain how the specialized fluoride-containing lithium and/or sodium water-swelling mica reacts and functions in the binder. Manifestly Adamowicz et al requires the lithium and/or sodium water-swelling mica as one of the two essential components of the binder.

Applicant's composition contains no component that corresponds to the specialized fluoride-containing lithium and/or sodium water-swelling mica required by Adamowicz et al. Moreover, Adamowicz does not suggest that removing the specialized fluoride containing mineral would produce a ceiling tile composition having improved drying characteristics. Accordingly it is clear that Adamowicz et al does not make applicant's claims obvious.

Moreover, all of applicant's claims require the presence of a lightweight aggregate, i.e. perlite, that provides bulk, but that does not function as a binder component. Adamowicz does not suggest any composition containing a

lightweight aggregated such as perlite. This is another reason why Adamowicz et al fails to make applicant's claims obvious.

On page 3 of the Office Action, the Examiner cites the Fisher paper to show that the wet tensile strength of polyaminoamide epichlorohydrin depends upon azetidinium, which is the most reactive cross linking group in that resin. Applicant does not dispute Examiner's contention in this point. The Examiner also cites the Baig patent to show an acoustical tile composition in which starch is the preferred binder that may be used in combination with latex. Because starch is inexpensive it is commonly used as a binder for acoustical tile. However, starch is very hygroscopic. Consequently, when starch is used as a binder in an acoustical ceiling product, the tile requires significant time and energy to dry. Applicant has discovered that the drying properties of acoustical tile are improved when the starch in the binder is replaced with a reactive water-soluble polymer, as claimed by applicant.

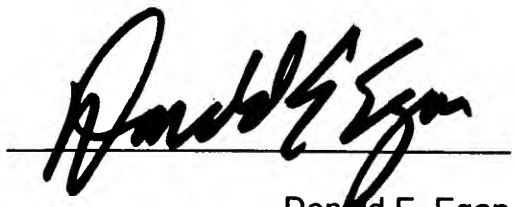
The Examiner cites the Symons reference to show that CMC is a well-known thickening agent that can be used as a retention aid (applicant's claims 8 – 10 require the presence of a retention aid). The Symons patent is directed to a composition for a foamed building board consisting primarily of calcium hemihydrate (i.e., stucco), a thermosetting resin, foam and other minor ingredients. Symons uses of sodium carboxymethyl cellulose as a retarder in this setting composition. Symons does not cite the use of the sodium carboxymethyl cellulose as a thickener or as a retention aid because in Symons's system there is no dewatering taking place. Additionally, thickening of the furnish as might be caused

by the use of high levels of sodium carboxymethyl cellulose, is to be highly avoided in a water-felting process such as claimed by applicant. Thickening directly inhibits the ability of the slurry to dewater. Thus, the Symons patent, 5,395,571 is directed to a method of making a building board that appears to be totally unrelated to applicant's invention. Clearly Symons does not suggest that the specialized fluoride mineral component taught to be essential by Adamowicz et al should be removed from the binder system or that removal of the specialized fluoride mineral component would lead to a ceiling tile having improved drying characteristics.

It is submitted that the rejection of applicant's claims as being obvious in view of Adamowicz et al when taken with the secondary references is improper, because Adamowicz requires the presence of a specialized fluoride mineral component as a critical component of the binder system that has no counterpart in applicant's composition. The combination of the secondary references cited by the Examiner with Adamowicz et al does not overcome this deficiency in Adamowicz et al. Certainly none of the secondary references suggests that the specialized fluoride mineral component required by Adamowicz et al should be removed from the binder system or that removal of the specialized fluoride mineral component would lead to a ceiling tile having improved drying characteristics. Further, none of the secondary references suggests that the specialized fluoride mineral component taught to be essential by Adamowicz et al should be replaced by perlite as required by applicant's claims. Accordingly it is clear that the cited prior art fails to make obvious any of applicant's claims.

It is submitted that all of the claims in issue are patentable over the prior art. Reconsideration of all grounds of rejection is respectfully requested in the light of the foregoing remarks and an early Notice of Allowance is solicited.

Respectfully submitted,



Donald E. Egan
Registration No. 19,691
273 Stonegate Road
Clarendon Hills, Illinois 60514
(630) 920-8440

January 31, 2002